

cases were apparently all instances of severe diabetes; he refers to them as *diabète consomptif*. Two instances of mild diabetes showed no change. The writer believes that the indigo-carmin test may be of some value as a means of diagnosis between milder and severer forms of diabetes.

SURGERY

UNDER THE CHARGE OF

T. TURNER THOMAS, M.D.,

ASSOCIATE PROFESSOR OF APPLIED ANATOMY AND ASSOCIATE IN SURGERY IN THE
UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE PHILADELPHIA GENERAL
AND NORTHEASTERN HOSPITALS AND ASSISTANT SURGEON
TO THE UNIVERSITY HOSPITAL.

The Results of Ninety-eight Cases of Nerve Suture.—DARE (*British Med. Jour.*, June 18, 1921, p. 885) says that all his cases are the result of gunshot wounds and have been under observation from twelve to thirty-six months. The author has taken the amount of motor recovery as the standard because it is more important functionally and was more easily determined. Sensory recovery, however, was more complete and earlier than return of motor power. Good or satisfactory results were obtained in 51 per cent of the cases, while 49 per cent were bad results. The series included ulnar, median, musculospiral, sciatic, musculocutaneous and brachial plexus lesions. The only cases to receive any preoperative or postoperative treatment by means of splints were a few of the musculospiral cases. The author feels that 51 per cent greatly exceeds the real truth, especially if one regards recovery from the point of functional usefulness. The results, on the whole, then are in some measure disappointing, considering the tremendous amount of regenerative power that the axis cylinders possess—probably more than any other tissue in the body. The neglect of splints has been responsible for most of the failures, especially with regard to the delicate intrinsic muscles of the hand. Electrical methods have not impressed the author and in the future he will not employ them for it is impossible to know exactly what one is doing in many cases. Moreover, Scheft showed, in 1851 (Langley confirmed his results in 1916), that a denervated muscle is in a state of fibrillation. The keynote of treatment is rest with gradual reëducation to muscles that have been injured by denervation from whatever cause. The recovery of sensation is practically never perfect, but in a great many cases some recovery of sensation returns and this of itself is a great advantage to the individual, protecting him from burns and other injuries and also indirectly leading to an increase of nutritional activity.

The Treatment of Syphilis by Intravenous Injections of Mercury.—LANE (*Lancet*, October 15, 1921, p. 796) says that this treatment was more rapid in its effect than any other method of mercurial adminis-

tration, painless in comparison with intramuscular injections and perfectly safe. One per cent solution of cyanide of mercury was employed and the dosage varied with the tolerance of the patient. It was found that many patients could stand 40 to 50 minims as a dose which was given five times a week. The maximum number of injections was 110 for a very severe frambœsiform syphilide, while the average number ran a little over 40. The strictest attention was paid to hygiene of the mouth and the occurrence of severe gingivitis was rare. Routinely one injection of salvarsan substitute was administered weekly.

The Accuracy of the Formalin and Sachs-Georgi Tests for Syphilis.—KINGSBURY (*Lancet*, October 15, 1921, p. 799) says that the accidental discovery in 1920, by Gate and Papacostas, that the addition of a small quantity of formalin to pooled syphilitic serums produced coagulation, and was without effect on normal serums, forms the basis of this new test. The results obtained from the formalin test prove once again the futility of basing conclusions on figures derived from a small number of cases, as small series have recently been published showing complete accord between formalin and Wassermann reactions. The technic of the test is simple and if the results were reliable it would be an excellent method whereby the practitioner could establish a diagnosis of syphilis. But less than half of the serums giving positive Wassermann reactions showed coagulation with formalin and—a fact of greater importance—nearly 10 per cent of non-syphilitic serums give a positive result. Any claim to the reliability of the test is, therefore, demolished. As early as 1910 it was pointed out that extracts of various organs gave a slight precipitate when added to syphilitic serum. The precipitate was found to be inconstant and was considered to be of little diagnostic value. In 1918 Sachs and Georgi called attention to the fact that the addition of a solution of cholesterol to alcoholic heart extract made a good antigen for a precipitation test. The results obtained are distinctly promising. The technic is much simpler than that of the Wassermann reaction, but there is great difficulty in determining the presence or absence of a precipitate in many instances. A strongly positive Sachs-Georgi reaction may be taken as evidence of syphilis, but a weak reaction must be looked upon with suspicion because of the difficulty in distinguishing between the weakest positive reaction and the slight precipitation given by some negative serums. The detection of the weakest positives may, however, be made easier by modification of the antigen and by special methods of reading the results.

The Indications for Surgical Treatment in the Different Types of Goiter.—SISTRUNK (*Surg., Gyn. and Obstet.*, 1921, **33**, 348) says that there are only three types of goiter—colloid, adenomatous and exophthalmic. Other types seen clinically are either variations or combinations of these three. Colloid goiter is definitely a goiter of youth and is the only goiter which disappears under the administration of iodine or thyroxin. The adenomatous type is the most common; 23 per cent of the patients with this type seen in the Mayo Clinic show symptoms of hyperthyroidism, but these symptoms do not develop until

the goiter has been present for an average of sixteen years. In young persons, unless the goiters attain considerable size or produce symptoms of pressure, they are not considered surgical. In the majority of instances after patients with adenomatous goiter have attained the age of twenty-five years surgery is advocated. All goiters of this type associated with hyperthyroidism are considered surgical if the condition of the patient will permit an operation. Exophthalmic goiters occur at any age but most often between the ages of twenty and forty. The condition is best treated surgically and the best results are obtained in patients operated on early in the course of the disease before marked damage has been done to the vital organs. Many patients require one or two ligations of the superior thyroid vessels preliminary to thyroidectomy in order to make it a safer procedure. If care is exercised in selecting the type of operation for a given case the mortality is low.

Clinical and Experimental Observations in the Use of Saline Irrigation in the Treatment of Diffuse Peritonitis.—WILLIS (*Surg., Gyn. and Obstet.*, 1921, **33**, 553) says that Murphy and others object to saline irrigation in diffuse peritoneal infection because it tends to produce shock by subjecting the patient to a longer operation, traumatizing the peritoneum and accelerating absorption, while washing off the defensive phagocytes. In favor of free irrigation it may be said that it lessens tendency to shock by prevention of undue loss of body heat. Moreover, it washes out mechanically unabsorbed bacteria, fibrin, pus, blood clots and intestinal contents which may serve as foreign material, facilitating the growth of bacteria. Finally, the peritoneum is an absorbing surface of greatest activity. Ruptured appendix, or appendiceal abscess, is a very frequent cause of fatal peritonitis. The author has had 1034 cases of acute appendicitis in the past twelve years; 33 cases were considered instances of true perforative diffuse peritonitis—some 3 per cent. Fortunately, for purposes of analysis his cases could be divided into two series—the earlier 14 in a period of five years were operated by the principle of rapid operation with minimal abdominal manipulation. The mortality was 50 per cent. The later series was made up of 19 patients, 18 of whom were treated by free incision, the opening of all pockets and combined irrigation with normal saline and the use of a water or electric suction apparatus. The mortality was 16 per cent. The author feels that a shorter and smoother convalescence is gained by this procedure. Of course gastric lavage, opiates and free use of salt solution per rectum and subcutaneously were employed in both series.

Further Data Concerning the Experimental Production of Pancreatitis.—ARCHIBALD and GIBBONS (*Ann. Surg.*, 1921, **70**, 426) say that there are three principal theories: (1) The pancreatic lesion is caused by the entrance of bile into the pancreatic duct by reason of an obstruction at the outlet of the common duct; (2) the lesion is caused by an infection travelling from an inflamed gall-bladder to the head of the pancreas by the lymphatic route; (3) that duodenal contents are forced into the common duct through the ampulla, and so into the pancreatic duct. Infected bile aspirated from the inflamed gall-

bladder exercises a much more severe necrosing and inflammatory effect upon the pancreas than does normal bile. Chemical investigation of infected bile has not yet proved that this difference of effect is due to an increase in concentration of the bile salts as the result of bacterial action on the bile. Mild grades of pancreatic swelling as estimated clinically are certainly possible and are represented by edema with early necrosis of the parenchyma, presumably the result of bile invasion. The clinical statement in operation records as to the presence of "a somewhat thickened and indurated pancreas" is probably a correct interpretation of fact in most cases. The gall-bladder, under conditions of irritation from stone or inflammation, is probably able to go into strong muscular contraction and the hypothesis is set up that such contractions may provide sufficient driving force to cause invasion of the pancreas with bile. The common duct sphincter is provoked to resistance not only by the acidity of the duodenal contents but also by sudden distention of the common duct through unexpected rises of pressure in the gall-bladder.

Surgical Management of Gastric Ulcers.—BALFOUR (*Ann. Surg.*, 1921, 74, 449) says infectious foci should be systematically searched for while postoperative direction of diet and habit of living should be included in present surgical management. The selection of operation is of great immediate importance and it is very probable that further progress will come from intelligent selection and application of methods now known rather than from additional operative methods. Four main considerations upon which the value of any operation for gastric ulcer should be judged are simplicity, applicability, immediate results and ultimate results. The author finds in the study of the Mayo Clinic cases that gastroenterostomy with cautery excision of the ulcer surpasses other methods by these standards. Gastro-jejunal ulcer is not wholly a sequel or complication of gastroenterostomy. Ulcers occasionally recur and new ulcers also form sometimes after any type of gastric operation. The author believes that the routine eradication of all septic foci and the adoption of a proper postoperative dietary and therapeutic regimen will be the greatest advance in preventing these recurrences. In the question of protection against cancerous degeneration the problem is unsettled. There is one fact certain—that no operation for gastric ulcer will absolutely assure a patient that he will not die of gastric cancer.

Arthroplasty.—PUTTI (*Jour. Ortho. Surg.*, 1921, 19, 421) says that the modern methods of arthroplasty allow us to create articulations that can attain functional properties which in some cases are equal to those belonging to normal joints. In others the new joint can fully satisfy the most exacting wishes of the patient. These articulations are able to support for many years even the work of trades which are very fatiguing. Some of the author's patients operated on for arthroplasty of the knee and elbow have been declared capable for military service in the late war. In ankylosis of the lower limb it is possible to obtain articulations which are not only quite moveable but also able to support the greatest fatigue. The progress in the field of arthroplasty is due to the interposition method. The author makes free flaps of fascia lata his choice.